

May 1995

Ten Years After the Warnock Report: Is the Human Neo-Conceptus a Person?

Agneta Sutton

Follow this and additional works at: <http://epublications.marquette.edu/lnq>

Recommended Citation

Sutton, Agneta (1995) "Ten Years After the Warnock Report: Is the Human Neo-Conceptus a Person?," *The Linacre Quarterly*: Vol. 62: No. 2, Article 10.

Available at: <http://epublications.marquette.edu/lnq/vol62/iss2/10>

Ten Years After the Warnock Report: Is the Human Neo-Conceptus a Person?

by

Agneta Sutton

The author is a Research Fellow, The Centre for Bioethics and Public Policy, London, England. This originally appeared in Medicina e Morale.

The 1984 *Warnock Report*, produced by the Committee of Inquiry into Human Fertilisation and Embryology, set up by the British Government, has been a trendsetter in the matter of legislation regulating embryo research. The 14-day limit on embryo research recommended by the Committee has been adopted not only in Great Britain but in a number of countries in Europe. Yet, the Committee openly declared that this time limit was an arbitrary compromise adopted "in order to allay public anxiety" (*WR*, 65) and allow scientists as much time for research on the human embryo as publicly acceptable.

Admitting that embryonic life begins at fertilisation the Committee wrote:

Once fertilisation has occurred the subsequent developmental processes follow one another in a systematic order, leading in turn through cleavage, to the morula the blastocyst, development of the embryonic disc, and then to identifiable features within the embryonic disc such as the primitive streak, neural folds and neural tube (*WR*, 59).

Once the process has begun, there is no particular part of the developmental process that is more important than another; all are part of a continuous process, and unless each stage takes place normally, at the correct time and in the correct sequence, further development will cease (*WR*, 65).

While it declined from explicitly answering the question of when the embryo becomes a *person*, it is clear that the Committee did not hold that personal human life begins when embryonic human life begins. To kill a person — or at least an innocent person — would be murder, and the majority of the Committee did not consider embryocide to be murder but recommended that research involving human embryos should continue (*WR*, 64).

Catholic and Anglican Reactions

Defending the sanctity of human life from the time of conception (fertilization), the Catholic Bishops of Great Britain were among those who took issue with the Warnock proposals (The Catholic Bishops' Joint Committee on Bio-ethical

Issues, 1983 and, also, 1984). In their response to the consultation document preceding the Warnock Report they argued that the 14-day limit on embryo research was arbitrary and scientifically unsound. All the evidence, they said, indicates a developmental continuity from the time of fertilization onwards and points to the conclusion that from moment onwards there is a new human life.

By contrast, the Board of Social Responsibility, a mouthpiece of The Church of England, declared that it was consistent with Anglican thinking to hold that "while a fertilized ovum should be treated with respect, its life is not so sacrosanct that it should be accorded the same status we afford to human beings" (BSR 1984. 8). In a subsequent document it became evident, however, that Anglicans were divided on this fundamental issue. Some were inclined to accept the Catholic view that human life begins at conception; others felt that the early embryo was not yet a human being — and even less a person (BSR 1985).

The "Pre-embryo"

In an attempt to provide some scientific justification for choosing the 14-day limit for embryo research, the Warnock Committee described the primitive streak as marking "the beginning of the *individual* development of the embryo" (*WR*, 66 — the italics are provided by the present author). This statement bears the hallmark of the embryologist on the Committee, Dr. Ann McLaren, who, with a number of other scientists and philosophers, holds that individual human life only begins at about the time of the formation of the primitive streak and that the early product of conception is not the same individual being as the subsequent fetus and infant.

In order to drive a conceptual wedge between the early product of conception and the post-fortnight embryo, a new word, "pre-embryo", was coined and its usage advocated almost simultaneously in 1986 in three different publications: Dr. Penelope Leach's explanatory note attached to *The First Report of the Voluntary Licensing Authority for Human in vitro Fertilisation and Embryology*; secondly, a paper, greatly influenced by the thinking of Professor Clifford Grobstein, entitled "Ethical Consideration of the New Reproductive Technology" by the Ethics Committee of the American Fertility Society; and thirdly, Dr. Anne McLaren's paper "Prelude on Embryogenesis" delivered the previous year to the Ciba Foundation Symposium on embryo research.

Is the Neo-conceptus an Individual Organism?

Several arguments were advanced in these publications for the view that the neo-conceptus is not an individual organism and that there is a discontinuity in the development from a one-cell entity, a zygote, to a multi-cellular organism of some 14 days after fertilization.

Dr. Leach claimed that fertilization starts cell-division only — not individual life (Leach 1986, 39). But her argument, based on the possibility of artificially inducing cell-division in the unfertilized oocyte, is beside the point. The fact that artificially induced cell-division has failed to produce live offspring in mammals (Edwards 1980, 643-645) proves that fertilization is a *sine qua non* of organic development orientated towards the formation of an organism capable of any life

at all outside the womb. A mammalian oocyte with solely maternal chromosomes is incapable of sustaining normal embryogenesis — as is also a denucleated oocyte injected with chromosomes derived solely from spermatozoa (Suarez 1990, 620-629). In other words, normal embryogenesis requires the fusion of gametes of both maternal and paternal origin — i.e., fertilization.

Moreover, when fertilization does start a process of cell-division which successfully leads to the development of a fetus, it is obvious that the individual organic life of that fetus was initiated precisely by this process of fertilization. When Dr. Leach calls the early product of conception a “cluster of cells” and “a precursor of the embryo, just as the separate sperm and egg were its precursors”, she is clearly wrong (Leach 1986, 39). Unlike the products of conception, no spermatozoon or oocyte is by itself capable of developing into a fetus.

When fertilization has taken place there is a new entity, a zygote, whose intrinsic powers and potentials are distinctly different in kind from those of the gametes taken separately — and different in kind also from the powers and potentials of any entity arising from cell-division started in an unfertilized oocyte. Fertilization is a necessary condition of goal-directed development towards the formation of a fetus and the development of an infant. Furthermore, it could be argued that this goal-directed development begins as soon as the spermatozoon has penetrated the oocyte, since its entry into the oocyte immediately initiates certain metabolic and secretory activities, the first important function of which is to prevent other spermatozoa from entering.

The second argument advanced by Dr. Leach for not regarding the neo-conceptus as an individual organism is that cell-division or cleavage does not always result in an embryo: things can go wrong. She mentions three types of failure: the product of conception may fail to implant; or, even if it does embed itself in the lining of the uterus, it might turn into a “blighted ovum”, or, on the worst scenario, it might turn into a hydatidiform mole (Leach 1986, 39-40).

Again her argument misses the target. She fails to take account of the fundamental distinction between a developmental failure due to environmental conditions and a failure due to conditions inherent in the conceptus itself. Failure to develop normally due to adverse intra-uterine conditions proves nothing about the nature of nascent human life and its development — except that it cannot survive under certain conditions. Such failures are accidents; they are caused by external conditions rather than by the intrinsic nature of the victims.

If, on the other hand, development fails to take place because the entity lacks the inherent capacity to develop normally, it is inappropriate even to speak of a proper product of conception. And, because the nature and potentials of the entity are radically different from those of normal products of conception, the developmental failure of such an entity — be it a failure to implant, a failure resulting in a “blighted ovum” or a mishap such as the development of a hydatidiform mole — can tell us nothing about the nature and development of normal products of conception.

Hydatidiform moles deserve special comment, however. There are two types: complete moles consisting of chorionic tissue only; and partial ones containing both fetal and chorionic tissue. A complete mole deriving from an oocyte which

has lost its nucleus but has been penetrated by two spermatozoa, or by a spermatozoon which has duplicated itself, is clearly not a proper product of conception, since it lacks a maternal chromosomal complement (Suarez 1990, 629-630). A partial mole may develop when an oocyte — with no loss of female nucleus — has been penetrated by more than one spermatozoon, or when an oocyte has been penetrated by a faulty spermatozoon, which due to an accident at gametogenesis possesses double or triple sets of chromosomes. Entities with such odd paternal chromosomal make-ups also lack the inherent capacity for normal embryogenesis, and so cannot either be regarded as proper products of conception. Their development, therefore, proves nothing about normal embryogenesis.

All three papers spoken of above contain arguments turning on the totipotency or lack of differentiation of the early cells. The one advanced by Dr. Leach is based on the view that the cells for a number of days after fertilization remain undifferentiated and are capable of developing into either fetal or so-called "extra-embryonic" tissue such as the placenta (Leach 1986, 39). Dr. McLaren speaks of totipotency rather than lack of differentiation, because, as she points out, in the mouse embryo — and, hence probably in the human embryo who closely resembles it — at the 16-cell stage, some four days after fertilization when the blastocyst has formed, the cells have already differentiated into two quite different types of cell (McLaren 1986, 9-10). The American Fertility Society's argument is phrased in terms of the claim that the cells produced after the first cleavage divisions possess full developmental potential (American Fertility Society 1986, 26S). All the texts suggest that the observations referred to show that the neo-conceptus is destined to become not one individual or entity but two distinct types of entity, namely an embryo proper and "extra-embryonic" tissue. The American Fertility Society — like Norman Ford a few years later (Ford 1988, 125, 137-139) — even goes so far as to suggest that the early cells after the first cleavages should be regarded as separate individual organisms (American Fertility Society 1986, 26S).

However, the fact that the cells of the neo-conceptus are not yet differentiated, or that their developmental orientations are not yet fixed, does not prove that the entity is not an individual organism. Conversely, the fact that the cells at the blastocyst stage are differentiated into two types — some of them being programmed to become part of the fetus and others to become tissue supporting or nourishing it — shows both the functional unity and the common overall purpose of the process leading to this differentiation and the organic wholeness of the subsequent "fetus-placenta-unit" (for this last term, see Serra 1988, 54). Unless the cells from the start were cleaving according to a single programme in synchronized order, it would be pure chance that they came to form a fetus with a placenta; and it would be pure chance that normal products of conception follow the same pattern of development from zygote to "fetus-placenta-unit". The placenta and other so-called "extra-embryonic" tissues are, therefore, to be regarded as fetal organs (Daly 1987, 11). The "fetus-placenta-unit" is one organism.

Furthermore, the fact that the placenta and other membranes are lost at birth

does not disprove the organic wholeness of the "fetus-placenta-unit", i.e., the unborn child. Rather, this loss is comparable to the child's loss of its milk-teeth later in life, a loss which certainly does not prove that his first teeth were not a proper part of him (Sutton 1990, 108).

What decides whether the neo-conceptus is an individual organism is whether there is a common overall plan and purpose in the early cell-division. And in those cases where cell-division in the early product of conception leads to an ever increasing differentiation resulting in a "fetus-placenta-unit", there is clearly what Angelo Serra has called a "rigorous unity in a gradually differentiated totality" (Serra 1988, 40). There is an over-all purpose.

Moreover, contrary to what the American Fertility Society suggests (American Fertility Society 1986, 27S), the fact that the trophoblast cells (the precursors of the placenta and other supportive fetal organs) are formed before the cells differentiating themselves into the precursors of the fetus is further proof of the "rigorous unity in the gradually differentiated totality". If the pace of the development of certain supportive organs is faster than that of other parts of the organism which they have to sustain, this is surely to ensure the necessary life-support for the further development of these parts. It is for the good of the organism as a whole.

Equally unconvincing is Dr. McLaren's argument that our tracing of the continuity of human corporal life cannot go back beyond the stage, on about the 16th day, when there is a spatially defined entity with spatially defined points, from which we can trace the different parts of the human body (McLaren 1986, 12). The fact that at the 16-day stage it becomes discernible which parts of the organism will develop into head, arms and legs does not prove that the conceptus suddenly becomes an individual organism at this stage. That we can trace the morphological development of what becomes the fetus back to this point only (if true), does not prove that the entity preceding the 16-day embryo is not one and the same organism as the entity half-way to becoming a fully formed fetus. What matters is the organic unity of the entity. The 16th-day stage is just one of the many stages in the continuous goal-directed process of increased differentiation leading to the formation of the "fetus-placenta-unit".

The final and oft repeated argument for not regarding the neo-conceptus as an individual organism is the fact of monozygotic twinning, which shows, so it is argued, that individual human life cannot begin before that stage is reached at which it is no longer possible for the product of conception to twin (Leach 1986, 40; McLaren 1986, 11; American Fertility Society 1986, 27S; Ford 1988, 135). Regardless of the time-limit for twinning, the argument is based on the dubious assumption that all embryos have an innate tendency — or at least ability — to twin. What little we know about monozygotic twinning indicates the very opposite. The incidence of monozygotic twinning, the same in all human populations, is a mere 0.36% of live births, indicating that the tendency to twin is genetically determined and peculiar to a very small percentage of embryos (McLean 1991, 65). And if monozygotic twinning is genetically determined, it provides no objection to regarding the vast majority of embryos as individual human beings from fertilization. Moreover, if it is genetically determined, when

such twinning does occur, it does so because the initial product of conception contains a gene programming that there be two, not one, individuals. In a sense, then, in this situation there are two individual presences already from the start.

If, however, monozygotic twinning is not genetically determined, then it must be understood as a form of asexual reproduction, whereby the conceptus sheds a part of itself (possibly a half), which in turn becomes a new individual organism. Even if this were the case, there is no problem about individuality. The original organism would continue its existence, while the daughter embryo would begin life at separation — a new individual life. In short, monozygotic twinning does not disprove the individuality of nascent human life but is perfectly compatible with the view that all human life is, and remains, continuous individual life from the time it begins.

It has been argued, then, that individual human life begins at fertilization, except possibly in the case of monozygotic twins (when one twin may have developed as an off-shoot from the other). However, no account has been taken of the fact that fertilization itself is a process taking time. Some hold that there is no new organism (as distinct from a spermatozoon and an oocyte) until the genetic material of the paternal gamete has fused with that of the maternal one to form a new genome composed of 23 pairs of chromosomes so arranged that one chromosome in each pair is inherited from the mother and the other from the father. It could be maintained, however, that once the process of fertilization has been initiated by the penetration of the zona pellucida (surrounding the oocyte) by a spermatozoon, and the zona reacts preventing any further spermatozoon penetration, the two gametes work in unison as a functional whole seeking to maintain its own integrity and, also, developing in accordance with a single overall plan towards the formation of the zygote — an entity with the potential to develop into a mature human being. It might be argued, then, that human life really begins when the zona reacts to sperm penetration (cf. Tonti-Filippini 1992).

Whether, the last point is accepted or not, it would seem reasonable to conclude that once the zygote has been formed, there is a new organism, different from the two gametes taken separately, but the same as the fetus, the child and the adult into whom it develops. For there is no discontinuity in the process of embryogenesis from the zygote stage to the fetal stage and beyond. No substantial changes take place after fertilization. The neo-conceptus, i.e. zygote and the entity after the first cleavages, is the same individual organism as the adult into whom it later develops.

Human Beings and Human Persons

The question that poses itself now is the following: if we accept that the life of a *human being* begins at fertilization and is continuous from then onwards until the individual's death, should we also accept that the life of the *human person* begins at fertilization? Do the terms "human person" and "human being" refer to the same creatures? Some philosophers have argued that they do not. The trendsetter among these philosophers was Michael Tooley. In a paper entitled "A Defense of

Abortion and Infanticide”, published in *Philosophy and Public Affairs* in 1972, Tooley argued that because the embryo, the fetus and also the infant lack consciousness and other intellectual capacities typical of adult persons, they do not deserve to be called persons (Tooley 1972, 37-65).

On Tooley’s line of reasoning, the term “human being” is a purely biological term referring to members of the species *Homo sapiens*, whereas the term “person” is a philosophical and theological term referring to creatures with certain intellectual capacities such as self-consciousness and rationality. It follows, of course, on this view that not all creatures possessing intellectual capacities need be human and, conversely, that not all human beings are persons.

Peter Singer, Helga Kuhse and Diane Wells, embracing Tooley’s account of personhood, argue that neither embryos, fetuses nor infants, nor those who are severely brain damaged or senile are persons (Kuhse and Singer 1985, 120-122, 132-133; Singer and Wells 1984, 90-91). According to Singer and his co-authors, to call these human beings persons and by virtue of the humanity ascribe the same rights to them as to hale and sane human adults is to express “specism”, a prejudice as regrettable as racism.

Tooley’s and Singer’s understanding of personhood can, however, be refuted by showing that what matters in regard to the notion of personhood is not present consciousness or presently exercisable intellectual abilities but a certain kind of nature, a “rational nature”.

I may not be exercising rational abilities while sleeping. Nor may I even be capable of doing so when sleeping. Yet, that would not temporarily make me a non-person. That I am capable of exercising such abilities when awake, shows that I am a person. The situation is both different and similar in the case of young children. They are not yet capable of exercising sophisticated intellectual abilities even when awake. But they possess an inherent capacity to develop intellectual abilities typical of adult persons. Provided all goes well, they will possess the intellectual abilities in question at some stage in life. And, as their lives are continuous, they remain the same individual beings from the time of conception until they die. If they are persons at some stages in their lives, then, surely they are persons at all stages of their lives.

In the words of Benedict Ashley and Kevin O’Rourke, the definition of personhood ought not to be merely synchronic but should be diachronic (Ashley and O’Rourke 1989, 209). The definition of personhood may begin with a reference to those intellectual capacities typical of adult human persons, but it must include the entire biography of the individual human being or organism possessing these intellectual abilities. (*ibid.*).

Developing this understanding, Ashley and O’Rourke distinguish between passive and active potentials. The potential of clay to become a pot at the hands of the artisan is described as a passive potential or capacity. On the basis of this distinction, they argue that a human embryo has an active potential or capacity to develop into a mature human person with the intellectual abilities typical of human persons, whereas, for example, a cat embryo has an active capacity to develop the characteristics of a cat (Ashley and O’Rourke 1989, 210).

Differently expressed, the adult’s presently exercisable intellectual abilities

must have originated from an initial capacity to develop those abilities (Sutton 1990, 114). A being possessing abilities associated with rationality must always have possessed a nature inherent in which was an original active capacity to develop such abilities. This kind of nature might be described as a rational nature. According to this reasoning, then, the human neo-conceptus possesses already a rational nature, the same rational nature as the adult possessing manifestable rational capacities. And hence, it seems reasonable to regard it as a person and to hold that the terms "human being" and "human person" refer to the same kind of creatures.

Where this kind of argument might seem to fail, however, is in the case of those people who, because they suffer from conditions such as Down syndrome or the fragile X-chromosome condition, never quite do develop what we call typical adult rational abilities. But to meet this argument — and the suggestion that they are not persons — it suffices to say that rationality is not the only human quality bearing witness to our personhood. There are also typically human emotions, sensibilities, affections and desires. The emotive, affective and volitive side of man must not be forgotten; man is not distinguished by rationality alone. And mentally handicapped people do express typically human emotions, sensibilities, affections and desires, and do so to various degrees — as do the intellectually hale and fit.

The Boethian and Thomist Understanding of Personhood

It is interesting to note that this understanding of personhood is in keeping with the Boethian definition of a person as an individual being with a rational nature — *naturae rationalis individua substantia* (Boethius, *Liber de Persona et Duabis Naturis*, cc.2,3) and also, that Thomas Aquinas accepted the Boethian definition of a person. This is interesting because it might be suggested that, if Thomas Aquinas had had a more accurate understanding of embryogenesis, he might not have believed in delayed animation but might have arrived at the conclusion that the rational soul is infused at conception and that the neo-conceptus is a human person — not just a living organism preparing to become a person. However, it is well known that Aquinas believed in delayed animation, because he held that a human rational soul could not be present in the human body until it was sufficiently formed to possess the organs through which such a soul could actualize its proper powers (Aquinas, *De Anima* X, ad 2; *Summa contra Gentiles*, II, 86, 40).

And contrary to what is being suggested above, there are modern philosophers who hold that even in the light of modern knowledge, Aquinas would not have accepted a theory of immediate animation. The most prominent of these philosophers may be Joseph Donceel, SJ, who has argued that, on Aquina's reasoning, the human body would not be ready to receive the rational soul until the central nervous system is developed (Donceel 1970, 76-105).

Let us consider this argument. If the possession of a central nervous system is a necessary and sufficient condition of the possession of a rational soul, it follows that it is not necessary for a human being actually to exercise rational abilities in order to be a person with a rational soul. Both the fetus and the infant would be

persons on this understanding, though the embryo or neo-conceptus would not. This is because both the fetus and the infant possess a central nervous system, and so fulfill the requirement of hylomorphism; that is to say, their bodies are thought to be vehicles through which the rational souls might be expressed; their bodies are thought to complement the soul.

But is the possession of a central nervous system really a *sine qua non* of the sort of complementarity that may be necessary? To focus on this point, the fetus is only potentially capable of exercising rational powers; it is no more capable of doing so than the neo-conceptus. If the rational soul requires a body with the organs through which it may express itself, would it not be sounder to suggest that the rational soul is infused only at a time when the soul actually begins to actualize its powers through these organs? Why should it lie dormant in the organism from the fetal stage until the toddler stage when the child begins to express rational abilities?

Conversely, if it is admitted that the fetus's potential to express rational abilities is an active capacity, one that is inherent in such a way that it will be actualized in the future (provided the development of the fetus is not hampered by illness, accident or intentional destruction), must it not also be admitted that this active potential is inherent already in the neo-conceptus or from the zygote stage onwards? If the rational soul may be present in the human organism without being in a position to express itself when there is a central nervous system, why may it not also be present before that in a human organism with the kind of tissues and cells preceding the formation of a central nervous system?

Is it not true that once one admits that the rational soul may be present in the body even if it is not (yet) in a position to express itself, one must also admit that the proper substrate of the soul cannot be any particular organ but must be the living human organism itself insofar as it possesses the inherent active potential one day to develop and express rational (and, also, typically human emotive, affective, volitive as well as spiritual) characteristics? And the human organism, the same living human organism, is present from the zygote stage to the fetal stage and onwards?

We seem yet again to arrive at the conclusion that unless an organism from the beginning possesses an active power to develop certain intellectual abilities, it will never do so and, conversely, that any organism who has the active potential to develop abilities of other features characteristic of mature human beings is already a human being with a rational — or spiritual soul — and nature.

Indeed, if it is accepted that from conception onwards, human life is a continuous process involving no substantial but only accidental changes, it follows logically on a non-dualist understanding of personhood that the human soul must be infused at conception. Conversely, as Diane Nutwell Irving has pointed out, any theory about the beginnings of human personal life which is based on some biological marker or event marks a substantial change. Aquinas would never have accepted a dualist theory; nor would he have accepted a theory that did not accord with observable facts. And the assumption that the embryo at some stage undergoes a substantial change is contradicted by the facts. Everything we know about embryogenesis indicates that there is continuous

individual life from the time of conception, and so that the nature of the organism remains the same from then onwards.

Of course, we know that Aquinas believed in a hierarchy of souls rising from the vegetative to the sensitive and to the rational soul in such a way that a higher soul possesses the powers of any lower soul; and that, following Aristotle, he also believed that the biological development of nascent human life was marked by a succession of substantial changes, at each of which it acquired a new and higher soul starting with the vegetative and ending with the rational soul (*Summa Theologiae*, 1, 118, 2 ad 2). But as Stephen Heany has shown, Aquinas also believed that until the conceptus was sufficiently developed to embody a rational soul, the "life principle" guiding its development did not come from within itself but from the paternal sperm (Heany 1993, 51). And noting the absurdity of this theory in the light of modern embryology, Heany convincingly argues that, if Thomist non-dualist lines of reasoning are applied to the present understanding of the embryo's development, it follows that right from the time of conception the organizing life principle of the human organism must be the rational soul of the being itself (Heany 1993, 51-68).

Heany begins his argument by showing that, on a Thomist account, it would be impossible for a lower soul to guide the development of the organism towards the acquisition of a higher and more powerful soul, since the effect cannot be greater than the cause (Heany 1993, 48-50). Hence, a vegetative soul, corresponding to a non-sensitive and non-rational organism, would not suffice to bring about the organic structure required to express rational powers. The only kind soul or life principle capable of directing the embryogenic process towards the development of the kind of body capable of expressing rationality would be a rational soul. However, since Aquinas did not believe that the rational soul is present from the time of conception, he drew the conclusion that it is the father's rational soul, the powers of which are inherent in the sperm or semen, which direct the process of embryogenesis (Heany 1993, 51). But this is unacceptable on a modern understanding. The fertilizing spermatozoon fuses with the oocyte and together they form the new genome, which at the biological level provides the information required for embryogenesis. The non-fertilizing spermatozoa and the rest of the semen are absorbed by the maternal body. Hence, on a 20th century Thomist understanding, the rational soul required for embryogenesis must inhere in the conceptus itself; there is no other possibility (Heany 1993, 54).

To conclude, in modern terms, at the level of molecular biology, the organic vehicle for expressing the organizing life principle of the neo-conceptus derives from the genome consisting of 23 pairs of chromosomes, one of each pair from the father, the other from the mother. At a philosophical level (or more precisely at the ontological level), on the other hand, if what distinguishes human beings from animals is their rational nature (complemented by certain affective, emotive and volitive characteristics), then their life principle is that inherent power which makes it possible for adult human beings to actually manifest rationality (and those other complementary characteristics mentioned). And this power we may call the rational and spiritual soul. Therefore, on a non-dualist understanding of the relationship between body and soul, unless the developing human organism

undergoes a substantial change at some stage in its development from the time of conception, the rational soul must have been present from that time onwards as an active potential to develop those rational (and other) abilities by virtue of which we speak of human persons and distinguish human beings from animals. And so we may say that the soul of the human embryo is a goal-directed, self-directing dynamism and active capacity to develop into a mature human being.

References

American Fertility Society (1986): Ethical Consideration of the New Reproductive Technology, *Fertility and Sterility*, vol. 46, suppl. 1, 1S-94S.

Aquinas T, *Summa contra Gentiles; De Anima*.

Ashley BM and O'Rourke K (1989): *Health Care Ethics: A Theological Analysis*, 3rd edition, St Louis, USA.

Board of Social Responsibility (BSR) (1984): *Human Fertilisation and Embryology*, The Response of the Board of Social Responsibility of the General Synod of the Church of England to the Department of Health and Social Security Report of the Committee of Inquiry.

BSR (1985): *Personal Origins*, The Report of a Working Party on Human Fertilisation and Embryology of the Board of Social Responsibility.

Boethius, *Liber de Persona et Duabis Naturis*.

Catholic Bishops' Joint Committee on Bio-ethical Issues, on Behalf of the Catholic Bishops of Great Britain (1983): *In Vitro Fertilisation: Morality and Public Policy*, Evidence submitted to the Government Committee of Inquiry into Human Fertilisation and Embryology (the Warnock Committee).

Catholic Bishops' Joint Committee on Bio-ethical Issues, on behalf of the Catholic Bishops of Great Britain (1984): *Response to the Warnock report on Human Fertilisation, comments submitted to the Secretary of State for Social Services*.

Daly T V SJ (1987), NSW Law Reform Commission invites Discussion on the Embryo, *St Vincent Bioethics Centre Newsletter*, vol. 5, no. 3, 11.

Donceel J SJ (1970), Immediate Animation and delayed hominization, *Theological Studies*, vol. 31, 76-105.

Grobstein C (1982): The Moral Uses of "Spare Embryos", *The Hastings Center Report*, vol. 12, no. 3, 5-6.

Heaney S J (1992): Aquinas and the Presence of the Human Rational Soul in the Early Embryo, *Abortion: A New Generation of Catholic Responses*, ed. Stephen J Heaney, published by The Pope John XXIII Center, Braintree, Massachusetts.

Ford N M (1988): *When Did I Begin?*, Cambridge.

Irving D N (1993): Scientific and Philosophical Expertise: An Evaluation of the Arguments on "Personhood". *Linacre Quarterly*, vol. 60, no. 1, 18-47.

Kuhse H and Singer P (1985): *Should the Baby Live?*, Oxford.

- Leach P (1986): Human in Vitro Fertilisation: An Explanatory Note Prepared by Dr Penelope Leach, *The First Report of the Voluntary Licencing Authority for Human in Vitro Fertilisation and Embryology*, Annex 3, London, 39-40.
- McLaren A (1986): Prelude to Embryogenesis, in G Bock and M O'Connor (eds), *Human Embryo Research: Yes or No?*, London, 5-23.
- McLean J (1990): Embryogenesis of Monozygotic Twins, *Catholic Medical Quarterly*, vol XLI, No 2, 65-72.
- Serra A (1988): The Human Embryo, Science and Medicine: Commentary on a Recent Document, in J-F Malherbe (ed) *Human Life, Its Beginnings and Development: Bioethical Reflection by Catholci Scholars*, Louvian-la-Neuve.
- Singer P and Wells D (1984): *Reproduction Revolution: New Ways of Making Babies*, Oxford.
- Sutton A (1990): *Prenatal Diagnosis: Confronting the Ethical Issues*, London
- Suarez A (1990): Hydatiform Moles and Teratomas confirming the Human Identity of the Preimplantation Embryo, *The Journal of Medicine and Philosophy*, vol. 15, 627-635.
- Tonti-Filippini N (1992): Further comments on the beginning of Life, *Linacre Quarterly*, vol. 59, no. 3, 76-81.
- Tooley M (1972): A Defense of Abortion and Infanticide, *Philosophy and Public Affairs*.
- "Warnock Report" (1984): *Report of the Committee of Inquiry into Human Fertilisation and Embryology*, Department of Health and Social Security, London.
-